

1. (Previously Amended) In a packet data communication system, a header compression method comprising the steps of:

providing by a transmitting unit a Van Jacobson TCP/IP  
compressor/decompressor;

determining if whether a data packet is a first data packet of a call;

if the data packet is the first data packet of a call, generating by the transmitting unit a TCP header;

if the data packet is not the first packet, concatenating by the transmitting unit a compressed RTP header and a compressed UDP header with the TCP header; and

sending by the transmitting unit the TCP header to/from the Van Jacobson compressor/decompressor as a unidirectional data transfer.

2. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 1, wherein there is further included steps of:

if the data packet is not the first data packet, performing by the transmitting unit the step of sending the TCP header.

3. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 2, wherein there is further included a step of setting by the transmitting unit a predetermined bit pattern in the first byte of the TCP header to indicate the unidirectional data transfer.

4. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 2, wherein there is further included a step of providing by the transmitting unit a connection identification in the TCP header.

5. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 2, wherein there is further included a step of providing by the transmitting unit a TCP checksum in the TCP header.

6. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 5, wherein there is further included a step of providing by the transmitting unit a UDP checksum in place of the TCP checksum in the TCP header.

7. (Original) In a packet data communication system, a header compression method as claimed in claim 2, wherein there is further included a step of compressing by the transmitting unit a UDP header and a RTP header.

8. (Original) In a packet data communication system, a header compression method as claimed in claim 2, wherein if the data packet is the first data packet, there is further included a step of sending by the transmitting unit a complete UDP header for a first data packet.

9. (Original) In a packet data communication system, a header compression method as claimed in claim 8, wherein there is further included a step of sending by the transmitting unit a complete RTP header for a first data packet.

10. (Original) In a packet data communication system, a header compression method as claimed in claim 8, wherein there is further included a step of sending by the transmitting unit a complete TCP/IP header for a first data packet.

11. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 1, wherein there is further included steps of:  
if the data packet is the first data packet, storing by a receiving unit information of a UDP header.

12. (Original) In a packet data communication system, a header compression method as claimed in claim 11, wherein there is further included a step of storing by the receiving unit information of a RTP header.

13. (Original) In a packet data communication system, a header compression method as claimed in claim 11, wherein there is further included a step of storing by a receiving unit information of a TCP/IP header.

14. (Original) In a packet data communication system, a header compression method as claimed in claim 11, wherein there is further included a step of storing by the receiving unit information in an IP header.

15. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 1, wherein there is further included steps of:  
if the data packet is not the first data packet, receiving by a receiving unit the TCP header and a compressed UDP header and RTP header.

16. (Original) In a packet data communication system, a header compression method as claimed in claim 15, wherein there is further included a step of regenerating the UDP header.

17. (Original) In a packet data communication system, a header compression method as claimed in claim 15, wherein there is further included a step of regenerating the RTP header.

18. (Original) In a packet data communication system, a header compression method as claimed in claim 15, wherein there is further included a step of regenerating the TCP/IP header.

19. (Currently Amended) In a packet data communication system, a header compression method as claimed in claim 15, wherein there is further included a step of discarding the new TCP/IP header.

20. (Original) In a packet data communication system, a header compression method as claimed in claim 1, wherein:

the transmitting unit is a mobile station; and  
the receiving unit is a packet data service node.

21. (Original) In a packet data communication system, a header compression method as claimed in claim 1, wherein:

the transmitting unit is a packet data service node; and  
the receiving unit is a mobile station.

22. (Canceled)

23. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 1, wherein determining whether a data packet is a first data packet of a call being performed by a packet data service node; and

if the data packet is not the first data packet performing steps of:

receiving by the packet data service node an uncompressed TCP/IP header; and

sending by the packet data service node the TCP/IP header.

24. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 23, wherein if the data packet is the first data packet there is further included steps of:

storing by the packet data service node the uncompressed TCP/IP header;  
and

sending by the packet data service node the TCP/IP header.

25. (Previously Amended) In a packet data communication system, a header compression method as claimed in claim 1, wherein determining whether a data packet is a first data packet of a call being determined by a packet data service node; and

if the data packet is not the first data packet performing steps of:

receiving by the packet data service node the TCP/IP header; and

regenerating by the packet data service node an uncompressed TCP/IP header.

26. (Original) In a packet data communication system, a header compression method as claimed in claim 25, wherein if the data packet is the first data packet there is further included steps of:

receiving by the packet data service node the uncompressed TCP/IP header; and

storing by the packet data service node the uncompressed TCP/IP header.

27-29. (Canceled)